

Failure Analysis of Water Pump Components Engine C11 Wheel Loader 966H Caterpillar

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Abstract. Damage to the engine is inseparable from some whose roles are interconnected with each other. The cooling system is one of the five systems on the engine, which is responsible for maintaining the working temperature of the engine so that the engine working temperature remains stable. This research was conducted to determine the cause of damage to the cooling system components, namely the Water Pump. The methods used in this study are component observation, disassembly, taking measurements, and comparison between the measurement results and the data in the Service Information System (SIS). According to the corresponding literature, component damage that generally occurs in water pumps is erosion, cavitation erosion, abrasives wear, adhesive wear, and Fretting Corrosion. The results of this study found corrosion damage to components due to improper maintenance and the use of coolant that was not in accordance with specified standards including the discovery of corrosion, erosion of cavitation in the housing and impeller, and there were also scratches on the shaft caused by friction between the shaft and the oil seal.

Keyword: engine, coolant, water pump and wear